

Amendments to the Claims:

1-13. (canceled)

14. (original) A computer readable medium containing a plurality of data structures for

finding a full match for a variable length search key, comprising:

a pattern or key that is to be searched;

a direct table that stores a first address location for a search tree;

a plurality of pattern search control blocks that each represent a branch in
the search tree; and

a plurality of leaves wherein each leaf is an address location for the result of
a search.

15. (original) The computer readable medium containing a plurality of data structures for

finding the full match of claim 14 further comprising a lookup definition table that
manages a tree search memory.

16. (original) The computer readable medium containing a plurality of data structures

for finding the full match of claim 15 wherein the lookup definition table comprises
entries that define a physical memory that the tree resides in, a size of the key and
leaf, and a type of search to be performed.

17. (original) The computer readable medium containing a plurality of data structures for finding the full match of claim 14 wherein the lookup definition table is implemented in a plurality of memories.
18. (original) The computer readable medium containing a plurality of data structures for finding the full match of claim 14 wherein a format for a direct table entry includes at least one of a search control block; a next pattern address that point to a next pattern search control block; a leaf control block address that points to a leaf or result; a next bit or bits to test; and a direct leaf.
19. (original) The computer readable medium containing a plurality of data structures for finding the full match of claim 14 wherein a format for a pattern search control block includes at least one of a search control block; a next pattern address that point to a next pattern search control block; a leaf control block address that points to a leaf or result; and a next bit or bits to test.
20. (original) The computer readable medium containing a plurality of data structures for finding the full match of claim 14 wherein a leaf data structure includes at least one of a leaf chaining pointer; a prefix length; a pattern to be compared to the search key; and variable user data.

21. (original) The computer readable medium containing a plurality of data structures for finding the full match of claim 18 wherein the direct leaf is stored directly in a direct table entry and includes a search control block and a pattern to be compared to a search key.
22. (original) The computer readable medium containing a plurality of data structures for finding the full match of claim 14 wherein a pattern search control block is inserted in the search tree at a position where the leaf patterns differ.
23. (original) The computer readable medium containing a plurality of data structures for finding the full match of claim 14 wherein a pattern search control block has a shape defined by a width of one and a height of one and is stored in a memory that has a line length of at least 36 bits.
- 24-45. (canceled)